

C40 GREEN AND HEALTHY STREETS DECLARATION:

**How cities are
creating streets
that put people first**



ACKNOWLEDGEMENTS

This report was created in collaboration with each of the signatory cities of the C40 Green and Healthy Streets Declaration. Each city section including the summary and the city resident impact stories were self-reported. The city summaries showcase past, present, and future actions the city is implementing to achieve the goals of the C40 Green and Healthy Streets Declaration. For further information on the Green and Healthy Streets Declaration, please check out the [Declaration webpage](#).

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FOREWORD

Many cities are among those on the frontline of climate change, feeling the impacts of record-breaking temperatures, rising sea levels, and climate related natural disasters.

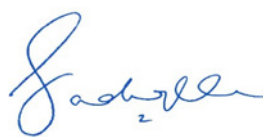
Since 2017, C40's Declarations and statements of political leadership – based on the toughest science-based targets and allied to concrete delivery milestones – have been signed by bold and forward-thinking Mayors. These reports document the ambitious action that has been implemented within cities. The importance of acting now is greater than ever. Focusing on achieving carbon neutrality by 2050 gives people a false sense of the time we have left to solve the climate crisis, and these Mayors have acknowledged that when it comes to creating safe, inclusive, resilient cities we must act now.

Despite the many challenges faced in recent times, with the global pandemic, economic disruption and upheaval, climate related natural disasters and in many cases strained financial resources, C40 cities have continued to act and have more than doubled the number of high-impact climate actions implemented in the six years since the Paris Agreement was signed. Cities have also already delivered more than 270 actions and are on track to deliver more than 900 additional actions by 2030, creating urban environments that allow citizens to thrive through creating streets that put people first,

cleaning the air that people breathe, creating low-cost and energy efficient homes and offices, ensuring citizens have access to balanced and nutritious food that does not harm the planet and advancing towards zero waste policies.

This must be a decade of action, with cities accelerating their efforts to tackle greenhouse gas emissions. For that reason, I have brought my own commitment to making London net zero forward by 20 years to 2030. I have also recently set out my preferred pathway to 2030 and identified further bold actions that London will need to take to achieve this goal. Delivery will require action by many stakeholders, but by setting out a bold and ambitious approach of our own we can encourage others to follow our example.

Congratulations to the cities featured in these reports for their leadership in creating **The Future We Want**, by demonstrating that their commitments are not empty words, but bold actions, and for driving the change needed for a safe planet for future generations.



Sadiq Khan
Mayor of London and Chair of C40 Cities

INTRODUCTION

Around the world, C40 mayors and the cities they lead are taking ambitious and urgent climate action, working together to build a more sustainable, resilient and equitable future.

One third of greenhouse gas emissions from C40 cities come from transport. Road traffic is the biggest source of air pollution, globally responsible for up to one quarter of particulate matter in the air¹. As cities continue to grow they are becoming more congested, with people spending more time in traffic. In terms of road danger, every year 1.35 million people die on the world's roads². Of those dying, 54% are vulnerable road users (people walking, cycling or riding motorcycles)³, with road death the 8th leading cause of death globally.⁴

To address this, 36 cities⁵, including 29 C40 cities have signed the C40 Green and Healthy Streets Declaration, committing to make their cities greener, healthier and more prosperous places to live by:

- Procuring, with their partners, only zero emission buses from 2025, and
- Ensuring a major area of their city is zero emission by 2030.

#TheFutureWeWant is one where our streets are safe and accessible for everyone. One where walking, cycling, and shared transport are how the majority of citizens move around our cities - and where all other trips, including goods and service transport, are made using zero emission vehicles.

Cities are achieving these outcomes by implementing “people first” planning policies, increasing the rates of walking and cycling and the use of public and shared transport that is accessible to all citizens, reducing the number of trips made by private car and transitioning away from vehicles powered by fossil fuels. In this report, we will highlight the transport initiatives that Green and Healthy Streets Declaration signatory cities are implementing to decarbonise transport and address the twin challenges of air pollution and the climate emergency, as reported by the signatory cities themselves.

¹Karagulian et al. (2015). [Contributions to cities' ambient particulate matter \(PM\): A systematic review of local source contributions at global level](#). Atmospheric Environment.

²World Bank (2021). [Tackling the road safety crisis in Africa](#).

³World Health Organisation (2021). [The Global Health Observatory: Road safety](#).

⁴Global Road Safety Partnership (2021).

⁵Non-C40 signatory cities include: Birmingham, Honolulu, Liverpool, Oxford, Greater Manchester, Santa Monica and West Hollywood

C40 CITY SIGNATORIES

Amsterdam
Auckland
Austin
Barcelona
Berlin
Bogotá
Cape Town
Ciudad de México

Copenhagen
Heidelberg
Jakarta
London
Los Angeles
Madrid
Medellín
Milan

Moscow
Oslo
Paris
Quito
Rio de Janeiro
Rome
Rotterdam
Santiago

Seattle
Seoul
Tokyo
Vancouver
Warsaw



EXECUTIVE SUMMARY

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Shortly after publishing the 2019 progress report, [How Cities Are Driving The Future We Want: city progress towards meeting Green and Healthy Streets Declaration commitments](#), the COVID-19 pandemic gripped life around the world and in our cities.

COVID-19 has had a complex impact on urban mobility in cities. In most C40 cities, public transport ridership has fallen and therefore so has revenue from ticket sales. Public transport agencies in cities worldwide face a critical funding shortfall that threatens jobs and services. In response to this, C40 Cities and the International Transport Workers Federation (ITF) launched [The Future is Public Transport](#) campaign that brings together a coalition of workers, mayors, union leaders and city residents around the world who are taking action to protect livelihoods, create good green jobs, and confront the climate crisis. We need urgent investment to maintain and expand safe, reliable and affordable public transport services for the millions of people living in our cities.

The pandemic has also led to a greater focus on the importance of walking and cycling as a means of moving around our cities, aided by more trips becoming local in character. In response to the COVID-19 pandemic, cities across the world have introduced temporary measures to rapidly reallocate road space from cars to public space, making it easier for people to walk or cycle. Many of these temporary measures have since been made permanent. Pre-existing trends towards more online shopping and home deliveries have accelerated.

Cities are working closely with stakeholders to manage and reduce the negative impacts of more delivery vehicles and to support delivery workers.

[The Global Mayors COVID-19 Recovery Task Force](#) set the agenda for achieving a green and just recovery from COVID-19. Cities are leading the way in delivering an inclusive recovery that is aligned with the principles of a Global Green New Deal, and that rebuilds cities and economies in a way that improves public health, reduces inequality and addresses the climate crisis.

Despite the economic impact of COVID-19, we have seen marked progress on accelerating the shift to zero emission bus fleets. Across the city signatories to the C40 Green and Healthy Streets Declaration, zero emission vehicles (trolleybuses, battery electric or hydrogen fuel cell buses) comprise on average more than 3% of the total bus fleet, and in some cities make up almost 20% of the total fleet. As of December 2020, five Green and Healthy Streets Declaration cities are already procuring only zero emission buses, ahead of the 2025 Declaration target.

Cities continue to transform their streets into inclusive, healthy and attractive public spaces. They are progressing towards the implementation of zero emission areas by introducing policies and incentives that promote significantly more trips by people walking and cycling, public transport priority and connectivity, fewer vehicles overall, and increase the uptake of zero emission vehicles and phase out fossil fuel vehicles.

CONSIDERING EQUITY IN SUSTAINABLE URBAN MOBILITY

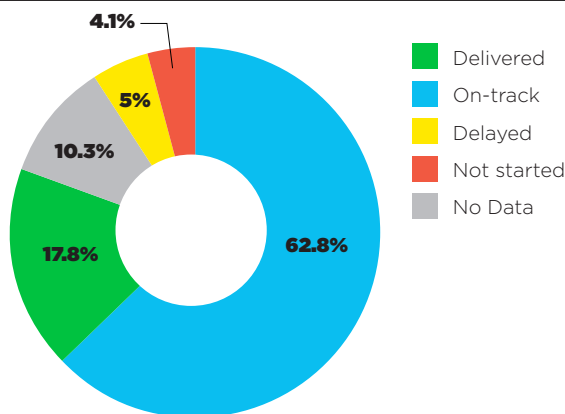
Climate action in cities can help to enhance social equity and provide multiple benefits for city residents. In delivering their Green and Healthy Streets Declaration actions, cities have conducted equity assessments to evaluate the possible positive and/or negative impacts of a climate action on city residents. This allows policies and actions to be designed in a way that promotes equity. Some highlights from cities who voluntarily reported their equity assessments are:

- **Bogotá** assessed the equity impacts of its low emission mobility policy and bicycle policy, in particular addressing the impact of these policies on women.
- **Seattle** conducted equity assessments of the closing of one or more of the city's streets or blocks to petrol/gasoline and diesel vehicles. Measures to reduce the risk of displacement of long term residents and businesses as a result of gentrification were considered, as well as the impacts for people using cars for accessibility reasons. The city's Transportation Electrification Blueprint was developed through a participatory outreach process with local community leaders.
- **Los Angeles** convened an equity leader task force and held stakeholder interviews with local communities, to address concerns about the risk of displacement due to the city's future zero emission area.



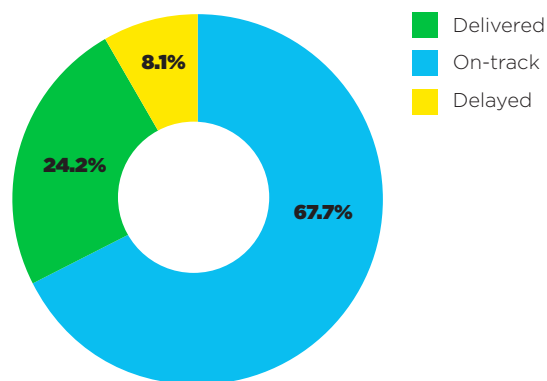
DATA ANALYSIS

Status of all GHS actions



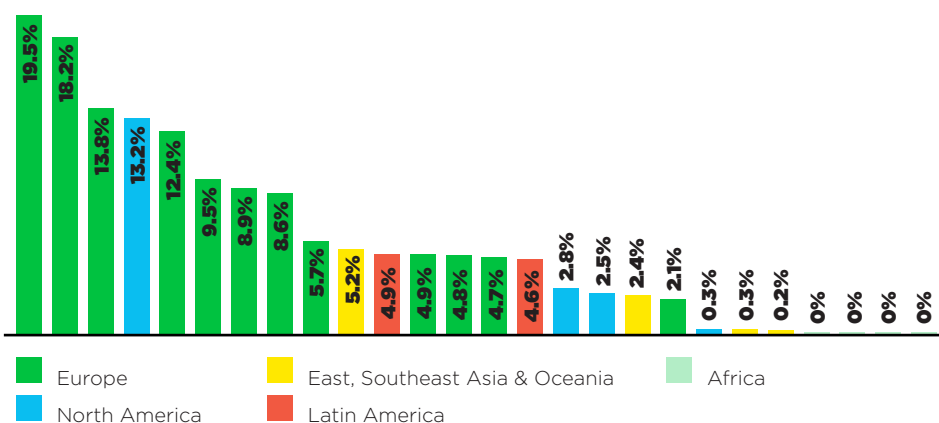
Across the two Declaration commitments, a total of 320 city actions were reported. Of these, 287 were assigned an action status, of which around 18% have already been delivered, 63% are on track, and 5% are delayed. 4% of actions have not yet started, while 10% of actions were not assigned a status. On average, there are more than 11 actions per city.

Status of zero emission bus actions



There are 62 actions being taken to accelerate the transition to zero emission bus fleets in the signatory cities. Of these, approximately 24% of actions have been delivered, 68% are on track, while 8% actions have been delayed.

Proportion of the bus fleet that is zero emission buses by region (%)



Zero emission buses include trolleybuses², battery electric, and hydrogen fuel cell buses. The graph above shows the proportion of the city bus fleets that are classified as zero emission. As an average across all signatory cities, more than 3% of the total bus fleet is zero emission, ranging from between 0.2% and 19.5% of the existing bus fleet in individual signatory cities.

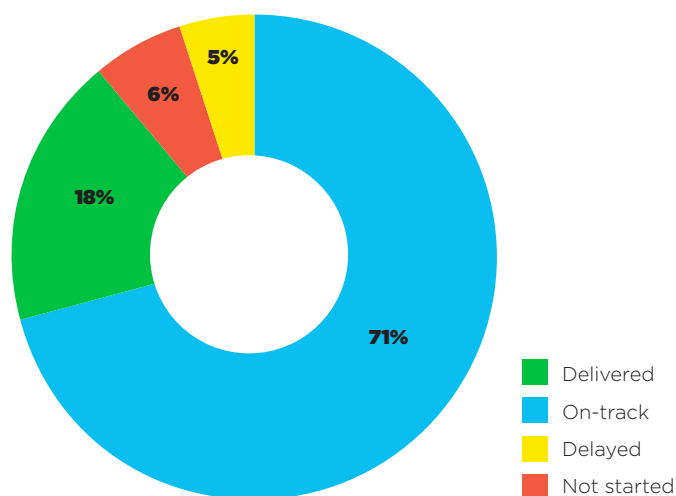
²In the 2021 reporting, some cities included trolleybuses when reporting the number of zero emission buses in their city, while others did not.

Bus fleet by type (excluding trolleybuses)



The graph shows the absolute number of non-diesel bus types reported by the signatory cities, showing that there are 3,963 zero emission buses in operation, including 3,890 battery electric buses and 73 hydrogen fuel cell buses in operation. There are also a considerable number of hybrid buses (2,657).

Status of zero emission area actions



Signatory cities are collectively advancing 258 actions as part of their zero emission area work, spanning a number of key themes, including; walking, cycling and transit; zero emission freight; and zero emission vehicles. Of these actions, 225 were assigned an action status, of which 18% have already been delivered, 71% are on track, 5% of actions are delayed, and 6% of actions have not yet started. Across the themes of zero emission area work, cities are advancing key actions towards zero emission area implementation, around vehicle restrictions, reallocation of road space, transport electrification, and transit improvements.

Key actions cities are taking to progress towards a zero emission area



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GHS signatory cities have restrictions in place (e.g. charges or bans) on high polluting vehicles that cover a significant part of the city. These are not zero emission areas, but represent an important first step.

For instance, London expanded its Ultra Low Emission Zone (ULEZ) to an area 18 times the size of the original central London zone.



21

GHS signatory cities are implementing measures to improve speed, reliability and accessibility of on street transit (buses, informal transit streetcars etc.) OR advancing equivalent rail improvements.

In Medellín, the city is adding 27 stops to its electric bus corridor to improve transit services.



22

GHS signatory cities are (alone or with partners) implementing the key measures to promote transport electrification.

Austin Energy's 'Plug-In Everywhere' programme now operates over 1,000 publicly accessible charging ports in Austin, all powered by 100% wind energy.



15

GHS signatory cities are reallocating road space from cars to active and sustainable modes on a permanent basis.

For example, Moscow now has more than 850 km of designated bike lanes in the city and by the years 2024-2025, will have implemented its Green Circle route connecting Moscow's parks through a circular cycle network.



CITY PROGRESS SUMMARIES

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The following section of this report contains progress and action summaries that were self-reported by each of the C40 Green and Healthy Streets Declaration signatories. The city summaries showcase past, present, and future actions the city is undertaking to achieve the implementation milestones of the Declaration.



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Auckland has continued to implement measures outlined in its Low Emission Bus Roadmap to drive the transition from diesel to clean electric buses. In July 2021, the city stopped permitting the procurement of new diesel buses. The city also established a national working group, which brings stakeholders together on a regular basis to address the challenges and opportunities of the electric bus transition.

In addition to electric buses, Auckland is concentrating efforts on advancing zero emission freight. Currently, the city is finalising the procurement of a small number of electric and diesel-hybrid ferries, as well as working in partnership with key industry stakeholders to conduct a pilot scheme for electric trucks in the city's future zero emission area (ZEA).

As part of Auckland's Access for Everyone initiative, the city has finalised the location of its ZEA, which will be across the Waihorotiu / Queen Street Valley. Soon, work will be done to determine the legal requirements for establishing the ZEA. The city is also developing programme business cases for walking and cycling projects, which seek to create a longer and safer network.

The city has provided public electric vehicle charging for many years and is currently reviewing its offering and identifying areas for improvement. Different services are expected to be developed and delivered over the coming years.



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Since signing the C40 Green and Healthy Streets Declaration in 2019, Austin has made significant progress in multiple areas.

Capital Metro, Austin's public transit operator, is on track to procure 200 electric buses by 2025, and by 2035, the entire bus fleet will be zero emission vehicles. In order to provide the required charging infrastructure, in September 2020, Capital Metro constructed its Metro North Operations Electric Bus Depot, which is now in service for charging electric buses.

The state of Texas, in collaboration with the city of Austin, created a visionary plan to vacate four automobile-centric blocks of Congress Avenue, linking the Texas State Capitol and the University of Texas. The new public green space will create a pedestrian-oriented park flanked by trees and electric buses that will allow for events, festivals and green tourism. In addition, the construction of the Texas Capitol Complex Mall pedestrian corridor is underway and on track for completion in the summer of 2022. The Texas Mall will link a continuous open space corridor from The University of Texas Speedway Mall through the Capitol grounds and connect to the Congress Avenue Historic District. Upon completion, this will be the centre of a 15-block pedestrianised area that will run through Austin's urban core. Streetscape improvements will increase bicycle and pedestrian connectivity to surrounding districts. In addition, the establishment of a Garden District around a cluster of notable

historical structures and significant landscape features will serve as a quiet and human-scaled area within an otherwise compact urban environment.

To support electric vehicle drivers, Austin Energy's 'Plug-In EVerywhere' programme operates more than 1,000 publicly accessible charging ports in Austin, all of which are powered by 100% wind energy through Austin Energy's Greenchoice programme.

The city is also in the process of completing its All Ages and Abilities Bikeway Network, an ambitious plan to build a 400 mile (640 km) connected bicycle network through the city, using a community-driven process that will enable all Austinites to travel around the city no matter the person's age or ability. As of 2020, 50% of the network was complete, and it is expected to be fully constructed by 2025.

In 2020, voters approved the allocation of a portion of the city's property tax to a new urban rail system, which will fund a comprehensive transit plan including 27 miles of new rail service, 31 stations and a downtown transit tunnel. One of the biggest challenges for new rail infrastructure development is neighbourhood and resident displacement. Therefore, the initial investment also includes USD 300 million for anti-displacement investments, a portion of which will be used for transit-oriented development and affordable housing along new rail routes.



BARCELONA

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The city of Barcelona is working to fulfil its urban mobility aims, which are to increase the sustainability of travel, reduce pollution emissions that damage human health, reduce the number of traffic collisions, transform urban space to favour walking and cycling, and increase urban greening to improve the habitability of public space.

From December 2020, Barcelona announced that it would procure only electric, hydrogen, and gas-hybrid buses. Currently, 8% of the city's bus fleet is electric, which is expected to rise to 30% by 2024 and more than 50% by 2030. Between 2021-2024, Transports Metropolitans de Barcelona, the city's transit operator, will procure 210 battery-electric buses, 46 hydrogen buses, and 154 gas-hybrid buses. In 2021, three of the city's most important bus routes were fully electrified.

As of 2020, 95 km² of the city was designated as a low emission zone (LEZ), one of the largest in Europe. At the same time, the city is gradually phasing out parking spaces for motorcycles, in addition to adding 32 km of pedestrianised streets. In public spaces, lifts and escalators have been introduced to increase accessibility.

Endolla Barcelona, the largest network of recharging points in Spain, will expand further over the next few months and increase its 600 charging points to 3,300, through a new investment of 12 million euros.

Barcelona has developed its Urban Mobility Plan 2024 in addition to its Walking Mobility Plan and Road Safety Plan. The plan outlines more than 300 measures to achieve more sustainable, safe and healthy mobility, and sets the goal that in 2024, more than 80% of all trips will be made by walking, cycling or public transport. The proposal is based on pedestrian mobility and emphasises measures for public transport, urban distribution of goods and regulation of surface parking.

By 2023, an additional 32.6 km of bike lanes will be introduced alongside improvements to existing bike lanes to make cycling easier and safer. This will increase total cycling infrastructure to 272 km. The expansion of the city's cycling infrastructure is part of the Superilla Barcelona plan, which aims to convert one million square metres of pavement and road space into more sustainable and healthy neighbourhoods. The target for walking is to increase the walking rate by 7.5 percentage points by 2024.



BERLIN

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Berlin has continued to develop its climate protection policy since signing the C40 Green and Healthy Streets Declaration in 2019. The city has successfully expanded the number of electric buses, with 137 electric buses currently in operation among the city's fleet of 1,430 buses. An additional 90 electric buses are currently under procurement. Several existing bus depots will be partially converted to facilitate the procurement and operation of electric buses, and by 2025 two new electric bus depots will be built.

In June 2021, the Berlin Senate reinforced its commitment to convert and expand its Low Emission Zone (Umweltzone) to a Zero Emission Zone in the longer term. These plans will be further examined on legal, social, climate and traffic-related grounds. The city is already working on developing the infrastructure that will support the Zero Emission Zone, through improving public transport services, as well as creating better conditions for cycling, walking and electromobility. The Berlin Climate Protection and Energy Turnaround Act also mandates that all motor vehicle fleets used by the public sector must be zero emission by the end of 2030.



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According to the Berlin Mobility Act, public transport is to be gradually converted to full operation with alternative or zero emission options by 2030 at the latest, including the creation of corresponding framework conditions. Several measures have already been implemented, such as a speed limit of 30 km/h and the banning of polluting diesel vehicles on certain roads (Umweltzone).



Since signing the C40 Green and Healthy Streets Declaration in 2018, Bogotá has worked in a coordinated manner to electrify its public transport fleet and develop the concept of Clean Air Urban Areas (ZUMA).

A fleet of 1,485 electric buses was procured in 2021 and 483 electric buses are currently in operation in the city. From 2022, Bogotá will only procure zero emission buses - three years ahead of the Declaration target - and the city is exploring alternative procurement and business models, as well as testing key technologies to enable this.

Through a multi-sectoral approach, the city has developed its concept of ZUMAs, and plans to implement integrated actions that target multiple key particulate matter emission sources, such as transport and industry. The city has developed a robust methodology for selecting and prioritising potential locations for a ZUMA, focusing on areas highly affected by poor air quality and where vulnerable communities reside. The city will conduct field work in these prioritised locations, to understand the needs and concerns of residents and potential mitigation measures, with the aim of declaring and starting the implementation of the first area(s) by 2022.

Bogotá is also expanding its 590 km cycling network, which was strengthened with an additional 39 km between 2020 and 2021. Additionally, 480 m² of additional sidewalks were constructed and 350 m were protected. Crosswalks were modified to make them more accessible and 6000 m² of street space was redistributed for people walking.

Bogotá is formulating its Zero and Low Emission Motorized Mobility Public Policy, which will be the short-, medium- and long-term roadmap to achieving zero- and low-emission mobility.

Zero emission freight is one of the key strategies under this policy. Bogotá conducted a cyclo-logistics pilot, which tested different operational models for last-mile distribution using bicycles. Further pilots regarding zero emission freight vehicles are planned.

Bogotá is delivering on the C40 Equity Pledge commitment by reporting equity and inclusion considerations in its climate actions

In the delivery of its Bicycle Policy, the city found that women cycle a lot less than men. Only a quarter of all trips by bicycle are made by women. A key policy aim is therefore to increase women's share of bicycle trips to at least 50% of all cycle trips in the city. This will be achieved through the inclusion of gender considerations in the instrumental process. The city has also considered gendered impacts of its Low Emission Motorized Mobility policy. From its findings and through its declaration actions, the city aims to increase employability and develop skills within the electromobility sector, in order to increase female participation within the transport sector, as well as boosting an economic recovery based on electric mobility.



CAPE TOWN

Cape Town is working to expand electric charging infrastructure in the city. In 2020, the city installed charging infrastructure at the MyCiTi staging area near the Cape Town Central Business District (CBD), as well as incorporating charging infrastructure into the plans for the new Phase 2 bus depots. The city is proactively preparing for the uptake in private electric vehicles, through establishing free EV charging stations at its facilities, and through communication and awareness-raising.

The city has also identified a location for a low emission area. The Bellville CBD pedestrianised zone is outlined in the City's Catalytic Land Development Programme in support of its Transit Oriented Development Strategic Framework (adopted in 2016). This programme was developed through rigorous analysis, which generated a selection of high priority sites and precincts for TOD investment. One precinct identified for redevelopment is Bellville CBD, the city's second metropolitan node with a significant public transport interchange. Within the Bellville CBD area, the city is formulating plans to introduce a

pedestrianised low emission area, which would favour non-motorised transport, low emission vehicles for last-mile freight distribution, transit-oriented development and urban regeneration. A precinct planning process is underway which will, inter alia, support cycling and walking.

The Bellville CBD node makes up the second central business district (CBD) in the Cape Town metropolitan area, after the primary Cape Town CBD. The area is in need of redevelopment due to urban degradation, and is also a major passenger and freight junction, but these services are poorly integrated. The Bellville CBD area is 58.5 hectares but its redevelopment will influence the surrounding area. Traffic modelling undertaken in 2018 indicates that the majority of trips in the area were undertaken by car (74% of those leaving the area in the morning peak, and approximately 56% of those arriving). Approximately 16% of those leaving the area are using non-motorised transport, which is higher than the city average. The aim is to encourage a shift from private cars to public transport and NMT, and in so doing also support existing public transport users.



CIUDAD DE MÉXICO

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Ciudad de México is working to promote integrated and sustainable mobility through safe, clean and accessible public transport solutions, the creation of safer spaces for pedestrians and cyclists, and the regulation of private transport.

To date, 173 buses have been acquired for the Metrobus system, 10 of which are fully electric and began operation in September 2021. Metrobus lines 3, 4 and 5 were extended and a 46 km zero emission line is in the planning process. The city is building an elevated trolleybus line in the east of the city, which will serve 130,000 people and reduce the journey time on this route by 23 minutes.

In order to increase accessibility to public transport, the city has built two cablebús (cable car/aerial tramway) lines. The first line began operation in July 2021, with a length of 9.2 km and a transport capacity of 48,000 people per day, reducing travel times from 90 to 33 minutes. The second line began operation in August 2021 and has a length of 10.6 km, making it the largest urban cable car line in the world; it has a transport capacity of 90,000 people per day and reduces travel times from 105 minutes to 36 minutes.

The city is also driving the technological renewal and electrification of its light vehicle fleet. To date, 732 efficient and hybrid taxis have replaced older vehicles, and it is estimated that an additional 200 will be introduced by the end of 2021. To increase non-motorised mobility, nearly 180 km of cycling infrastructure was built by the end of 2021, along with nine bicycle parking facilities. Additionally, in March 2021, a smart bicycle lane was introduced in the second section of the Chapultepec Forest, made out of plastic waste, which allows for temporary water storage and prevents flooding during the rainy season.



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COPENHAGEN

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With its 2019 budget agreement, Copenhagen is focused on accelerating the implementation of zero emission buses. By the end of 2025, all buses that are wholly or partly financed by the city will be zero emission. With the adoption of the 2019 municipal plan, Copenhagen has also pledged to reduce the mode share of private vehicles to 25% of all trips made in the city by 2025, with at least 25% of trips each being taken by walking, cycling and public transport.

The city is also coordinating with the Danish national government in order to clarify the legal framework for implementing a zero emission area. The city has suggested three concepts for a zero emission area: 1) A central zone within the medieval city centre; 2) A children's zone, where many activities for children would be located; and 3) A freight delivery zone.



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HEIDELBERG

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Heidelberg's rising population, increasing number of commuters, focus on climate protection and air quality control, electric mobility, noise protection and digitalisation, are all changing traffic patterns in the city.

The city's new 2035 traffic development plan seeks to address these factors in a forward-looking manner. The plan will form the strategic framework for all transport projects in Heidelberg up to 2035. It considers all aspects of mobility and seeks to include residents in participatory processes.

In addition to the traffic development plan, the 'Masterplan Green Mobility' has been adopted by the city council and several elements of the plan have been implemented or are in progress. The city is working to electrify its municipal fleet, for example by introducing the city's first electric street-cleaning vehicle. Zero emission buses

have been procured, with three electric buses operating on an express line between the main station and the city centre, while the invitation to tender for hydrogen buses has been published in expectation of the procurement of 27 hydrogen buses in 2022/2023.

Efforts are being made to increase active travel rates in the city, via the improvement and expansion of the city's cycling infrastructure. This includes a bike garage that has been installed at the main station, a new cycling and walking bridge over the Neckar river that connects the city centre to the university/medical campus, and an expansion of express cycleways to connect neighbouring municipalities.

Finally, the city has introduced several car-free zones in newly developed areas on former military sites, such as Patrick-Henry-Village, Mark-Twain-Village, and Heidelberg Innovation Park.



JAKARTA

Since signing the C40 Green and Healthy Streets Declaration in 2019, Jakarta has made a concerted effort to progress towards achieving the two Declaration commitments.

In 2021, 30 electric buses were procured and it is expected that an additional 70 electric buses will be procured in 2022, ready for the operation of a 100 electric bus pilot on three bus routes throughout 2022. TransJakarta, the city's Bus Rapid Transit system, has prepared a roadmap for the expansion of electric buses – in 2023, the focus will shift to electrifying the city's medium and micro bus fleet. TransJakarta will only procure electric buses from 2024, ahead of the Declaration target, which is forecast to lead to TransJakarta's bus fleet consisting of 83% battery electric buses by 2030.

The city has implemented its Kota Tua low emission zone pilot – an area of significant tourist footfall – which boasts enhanced public transportation services, reduced traffic congestion, limited parking areas and free shuttle buses.

Building on the Cycling Friendly Jakarta Program, which provides alternative routes for accessing tourist hotspots such as the State Palace, Banteng Field Park, Ancol Dreamland Park, Glodok Area, and the Kota Tua Tourism Area, 22 bicycle lanes were established throughout the COVID-19 pandemic. To improve the experience of pedestrians in Jakarta, the city aims to create 2,600 km of pedestrian sidewalks by 2030, with a minimum width of 5 metres, so that all people, regardless of ability, can comfortably walk in these areas. Thus far, the city has created an impressive 336 km of the target for this project.

Inclusivity has also been at the core of Jakarta's public transit planning. The city's Jak Lingko card has reduced the cost of travel from around 30% of income to 10% and has provided an integrated system that covers previously informal minibus taxis, as well as the bus rapid transit and mass rapid transit systems. The city is aiming for its residents to be able to access public transport within 500 metres of their home, and to increase public transport mode share from 25% to 60% by 2030. All of these measures will ensure that public transport transitions will benefit all of Jakarta's residents, regardless of their socioeconomic status.



LONDON

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On 25 October 2021 the Mayor expanded London's Ultra Low Emission Zone (ULEZ) to an area 18 times the size of the original central London zone. In its first month of operation, 92% of vehicles operating in the new zone met the standards, up from 39% in February 2017 when changes associated with the ULEZ began. On an average weekday there were around 47,000 fewer older, more polluting, non-compliant vehicles seen in the zone compared to two weeks before the scheme was introduced (a 37% reduction). Overall, there were 11,000 fewer vehicles driving in the zone each weekday (a 1% reduction).

Together, the expanded ULEZ and tougher standards for the Londonwide Low Emission Zone for heavy vehicles will reduce NO₂ emissions from vehicles by nearly 30% across the city. It will also help tackle the climate emergency, reducing carbon emissions from cars and vans by 100,000 tonnes which is equivalent to taking 60,000 cars off the road.

The 2018 Mayor's Transport Strategy has the bold aim for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041. Encouraging modal shift and developing Zero Emission Zones (ZEZs) are a key part of the move towards eradicating air pollution and tackling the climate emergency. ZEZs play a role in reducing carbon and air pollutant emissions by encouraging the decarbonisation of transport, and will be part of the solution towards achieving the Mayor's net zero ambition by 2030.

The Mayor has worked with Transport for London (TfL) to develop guidance for ZEZs, with the first delivered in the London Borough of Hackney and another introduced in March 2020, on an 18-month trial basis, in Beech Street, City of London. The ZEZs are supported by the Mayor's £22 million (USD 30 million) Air Quality Fund.

The Mayor has committed to the entire bus fleet becoming zero emission as quickly as possible and by 2037 at the latest. In September 2021, the Mayor announced that London will procure only zero emission buses from hereon, four years ahead of the Declaration target. In June 2021, the Mayor launched England's first double-decker hydrogen bus fleet, with 20 new hydrogen buses to be used on Route 7 between East Acton and Oxford Circus.

The Mayor has also supported the delivery of over 300 rapid-charging points – from zero in 2016 – and more than 3,000 standard charging points.

In response to the COVID-19 pandemic, TfL developed the StreetSpace for London programme, in line with guidance from the national government to urgently reconsider the use of street space, and provide safe and appealing spaces to walk and cycle as an alternative to car use. Interventions include temporary cycle routes to extend the strategic cycle network and footway widening to make additional space for people walking in town centres and at transport hubs. By March 2021, close to 100 km of new or upgraded cycle routes were built, 86 km of bus lanes were upgraded to 24 hour operation, 2,259 signal timing changes were made to prioritise people walking, and 88 Low Traffic Neighbourhoods were delivered.

All 12 Low Emission Bus Zones were completed, a year ahead of schedule, reducing bus-related NOx emissions by an average of more than 90% along some of the capital's most polluted routes. All buses in TfL's 9,000 strong bus fleet now meet or exceed the cleanest Euro VI emission standards, reducing harmful NOx emissions from buses by an average of 90 per cent and making London one single Low Emission Bus Zone.



LONDON

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Future Neighbourhoods and Greener Together

The Mayor recently launched his Future Neighbourhoods 2030 programme, which aims to tackle some of London's defining environmental challenges - including the climate emergency and air quality - whilst creating jobs, developing skills and supporting a just transition to a low carbon circular economy. Somers Town in the London Borough of Camden and Notting Dale in the Royal Borough of Kensington and Chelsea will use the funding to deliver more than 40 projects across the two neighbourhoods. The projects will see communities and local government working together to accelerate ambitious climate action, lower emissions, clean up their air and transform their homes. In doing so, the programme will help to convey the look and feel of a net-zero carbon neighbourhood in London.

Greener Together is a pilot project supported by the Mayor of London and led by a number of partners, which aims to address environmental inequality linked to social and racial injustice in London. The area chosen for the pilot is in Newham, East London, which is one of the most environmentally deprived areas in London. The project, coordinated and led by local residents, aims to make the area 'happier, healthier and greener', including the creation of new community green space for growing flowers, herbs and edible plants, the installation of an air quality sensor, and redevelopment of play areas.



LOS ANGELES

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Since signing the C40 Green and Healthy Streets Declaration in 2017, Los Angeles has worked in a coordinated manner with the relevant municipal institutions to transform its bus fleet, as well as advance the planning of a zero emission area.

Through Mayor Garcetti's 2020 Executive Directive 25, the Los Angeles Department of Transportation (LADOT) was directed to make its bus fleet 100% zero emission by 2028. In 2019, LADOT placed the nation's single-largest purchase order of 155 electric buses. To date, 29 of these buses have been delivered, of which 27 are in daily operation and have logged over 50,000 e-miles (more than 80,000 km) since 2021.

LA Metro, the regional transit agency, has a goal of 100% zero emission buses by 2030. So far, 24 buses are in daily service in the recently completed Bus Rapid Transit (BRT) electrification project (G Line), and the agency is working on electrifying their second BRT line (J Line) by the end of the year.

Through the Bloomberg Philanthropies American Cities Climate Challenge, Los Angeles received two years of support from C40 and the Institute for Transportation and Development Policy (ITDP), International Council on Clean Transportation, and the Natural Resources Defense Council for planning a zero emission area (ZEA), culminating in the creation of a ZEA Guidance Plan from ITDP, delivered to the city at the end of June 2021.

For zero emission freight, Los Angeles City Council recently passed an updated municipal code that allows the city to designate and enforce ZE Freight/Delivery Curb designations ('zones'). The code came into effect in August of 2021, and has led to the introduction of five pilot curb zones in the city. In addition, LA recently secured a grant from C40 and the Ingka Group to pursue more work around ZE freight/delivery access for small businesses. This work has just begun and will take place throughout the spring of 2022 with the LA Cleantech Incubator as the contractor.

Los Angeles is delivering on its commitment to the C40 Equity Pledge by reporting equity and inclusion considerations in its climate actions

In the delivery of the C40 Green and Healthy Streets Declaration, the city has convened an equity leader task force with community-based and environmental justice organisations. Targeted stakeholder interviews have been conducted to understand communities' views on zero emission areas. They found that communities are very concerned about the risk of displacement as a consequence of transportation projects and the speed at which the city can deliver a project that will benefit local communities. There is also concern that zero emission areas could also result in gentrification and rising property values. The city is committed to finding equitable solutions together with local communities.



Madrid plans to procure only zero emission buses by 2023, two years ahead of the Declaration target. Madrid City Hall has agreed, through the Municipal Transport Company (EMT), to tender out new electric buses. EMT has invested in the purchase of 50 electric buses (for the years 2021, 2022 and 2023). In 2021, 50 more electric buses and ten hydrogen fuel cell buses will be tendered for delivery in 2022. By January 2023, EMT will no longer provide any service with diesel buses, and its entire fleet will consist of electric, natural gas, hybrid or hydrogen fuel cell buses.

Madrid attended the C40 Zero Emission Areas workshop in 2018, and is developing the concept for a proposed city wide zero emission area(s) and the appropriate policies to move this forward. The city is also testing different approaches to the city wide zero emission areas, including restricting certain roads to zero emission vehicles only. The city has kicked off its City Hall-Academia collaboration meetings for a pilot project to set up zero emission areas on university campuses in the city of Madrid.

All projects drafted for the modification of public spaces have the clear goal of enhancing active mobility and improving accessibility. The city has carried out important pedestrianisation projects in several districts and major remodelling works, such as the Plaza de España.

In addition, Madrid has increased its cycling infrastructure to a network of 714 km of cycle lanes. In order to encourage the use of bicycles, the city has also steadily increased the number of bicycle racks by 8.6% in the last year, to 1,236. Regarding public bicycles, Madrid has a well-established public electric bicycle system, known as BiciMAD. Throughout 2020, the largest expansion of the BiciMAD service since its deployment in 2014 was delivered, with the installation of 51 new stations. In addition, the city launched a new dockless bike hire service, called BiciMAD Go.



Medellín is working hard to electrify its transport network. The city continues to drive the electrification of its bus fleet, purchasing 64 standard electric 80-passenger buses and expanding its electric bus fleet to 69 battery electric buses now in operation. To support the rollout of electric vehicles, the city has built two electric charging points with a capacity of 3 megavolt-amperes (MVA). In addition, the operator Masivo de Occidente has purchased four 40-passenger electric buses with a charging infrastructure of 0.4 MVA.

Medellín is also expanding its mass transit network, with the construction of an additional 27 stops along the O Line and five stations on the 2 Line. The city has also introduced seven electric taxis for public service.

During the COVID-19 pandemic, the city built 11.6 km of temporary bike lanes to encourage more active travel. The city hopes to increase its bike lane network to 53 km by 2023.





Milan has strengthened its efforts to tackle climate change, reduce greenhouse gas emissions and increase the health, wellbeing and economic opportunities of its residents. The city is prioritising the improvement of walking and cycling infrastructure, and continuing to tighten restrictions on the most polluting vehicles in 'Area C' and 'Area B' of the city. Area C is an area of 8.2 km² in central Milan that covers 4.5% of the city's total area and almost 5% of the population. In this area all vehicles must pay to enter the zone and the most polluting vehicles (both diesel and petrol engines) are prohibited. Electric vehicles, motorcycles, taxis and public transit vehicles are exempt from the charge. Area B is the citywide low emission zone – an area of 132 km² covering almost 70% of the city and 97% of the population. Area B is the largest limited traffic zone in Italy and one of the largest low emission zones in Europe, and is introducing incremental prohibitions on the most polluting petrol and diesel cars.

The city is advancing the Piazze Aperte programme to redesign and redistribute public spaces and improve the quality of life in all neighbourhoods.

The city has confirmed that it will only procure zero emission buses from 2021, four years ahead of the Declaration target. A total of 165 electric buses are already operational in the city.

In addition to the existing low emission zone (Area B), the city of Milan is firmly committed to establishing a zero emission zone. In particular, it will conduct a carbon neutral pilot area with enhanced active personal mobility. In the carbon neutral area, zero emission buildings will be realised in an urban space where only active travel will be allowed, to the exclusion of cars and motorcycles. In particular, the pilot will promote zero emission mobility by limiting a significant area of the city to the circulation of zero emission vehicles. By 2050, Milan aims to be a carbon neutral city.





Since signing the C40 Green and Healthy Streets Declaration, the number of electric buses in Moscow has doubled. The city signed a contract to procure electric buses produced by Russian manufacturers KAMAZ and GAZ, and Mosgotrans, the state-owned transport operator, now operates 1,000 electric buses on 52 bus routes.

Moscow is also working to reallocate road space to walking and cycling, expanding its river walks and creating vehicle-free public areas. Currently, there are more than 850 km of designated bike lanes in the city. Twelve streets of 8 km in length with an area of 158 hectares and 33 Moscow parks with an area of 278.4 hectares have been built.



A transition to zero emission freight transport is being pursued, following the introduction of an emission standard for freight transport in the city. To facilitate increased electric vehicle operation in Moscow, the city is planning to expand its electric transport charging network and aims to have 600 charging stations installed across the city by 2023.

By the end of 2022, the city government will purchase and put in service an additional 600 electric buses. Moscow is also working on a project to establish 24 streets and public areas with an area of 288 hectares, 10 river walks with a length of 8.4 km, and 106 park zones with an area of 1,144 hectares. By the years 2024-2025, the city will have implemented its Green Circle route, an ambitious project that will connect Moscow's parks through a circular cycle network.



Oslo's car-free liveability programme, launched in 2017, is making the city greener and securing space for people and activities in the city centre.

An action plan outlining all activities and measures for the 2018-2027 period was adopted in September 2018. The city adopted a new zoning plan with new systems for pedestrianised streets in June 2019. The street Dronningens Gate was rebuilt to allow more room for pedestrians, and a number of new parklets and children's playgrounds have been introduced in the area. Since 2016, around 760 street parking spaces have been removed, and priorities have been given to freight and other utility transport. In 2020 the area was extended to include the Tøyen and Grønland neighbourhoods.

The 'Bylivsbarometer' is under development to continually measure the development of city life and the use of the city area.

Oslo is currently developing a concept for zero emission zones (ZEZ) in the city centre, in line with national guidelines from the Norwegian white paper 'Climate Plan Meld. St. 13 (2020-2021)'.

The introduction of the ZEZ will follow a rollout process whereby restrictions initially apply to all light vehicles (up to 3,500 kg) within a central zone by 2022. In 2023, restrictions will be expanded to apply to all types of vehicles (over 3,500 kg), with some exemptions. By 2026, the last stage in the rollout process will see the area expanded to cover a larger area of the city.

New pedestrian street in the city centre of Oslo

Olav Vs gate was turned into a spacious pedestrian street in 2021. Trees were planted, charging stations for electric taxis were installed, and parking spaces were reallocated to goods delivery and disability parking. The wider pavements favour social interactions and are appreciated by businesses located on the street. This pedestrianisation scheme was introduced at the same time as a pilot project for zero emission site operation, which has primarily relied on electrical machinery that produces less noise and no on-site pollution. The aims of this project were closely aligned with Oslo's goal of creating a city centre environment that prioritises pedestrians and cyclists over vehicles.



PARIS

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Paris will continue to work towards its target of zero diesel in Paris by 2024. Greater Paris' current low emission zone (LEZ) will be strengthened in stages to achieve this. Since July 2021, the Grand Paris Metropolis, covered by the LEZ since 2019, has had the same level of restrictions as the city centre. Mayor Anne Hidalgo announced an ambitious proposal for a 'Limited Traffic Area' to be introduced in 2022-2023 – this proposal would ban through traffic in four central districts, with priority given to people walking and cycling, and exemptions made for residents, professionals, taxis and public transport. This proposal seeks to address the estimated 350,000–500,000 cars that travel in this area every day.

Ile-de-France Mobilité, the regional transit authority, aims to procure 800 electric buses by 2024, and all RATP buses are expected to be bio-gas or electric by 2025.

The city has implemented new cycle lanes during the COVID-19 pandemic. There is now a network of more than 1,000 km of cycle lanes in the city.

Twenty-seven Paris Respire (Paris Breathes) zones are in place, which are pedestrianised on Sundays and public holidays. There have been more than 100 'Rues aux écoles' (School Streets) implemented since their launch in 2020, with more in the pipeline. These aim to pedestrianise the streets around schools, in order to reduce noise and air pollution, and improve road safety. To further improve road safety, Paris has introduced a speed limit of 30 km/h across the whole city, with the exception of a few lanes.

Other plans for the city include the transformation of 50% of on-street parking for bike lanes, carsharing, or urban greening, and the ongoing delivery of the RER V cycle network. Named after the RER train network that links Paris and the suburbs, RER V aims to expand the cycle network so that cycling to work is a viable option for people who live outside the Paris ring road.

Finally, the city intends to develop a new urban logistics strategy and ban diesel engines by the summer of 2024.



QUITO

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Since signing the C40 Green and Healthy Streets Declaration in 2018, Quito has coordinated with relevant municipal institutions, including the Department of Environment and the Department of Transportation, to consolidate the low emission zone (LEZ) in the historic centre of Quito (HCQ). The Ordinance for the Promotion of Mobility with Zero Emission Vehicles is under development at the Metropolitan Council, which will facilitate the declaration of the HCQ as a LEZ.

In February 2020, a cooperation agreement was signed between the Urban Electric Mobility Initiative and the Environmental Fund to implement the project SOLUTIONSplus, which focuses on establishing last-mile logistics and passenger transport pilot projects for the transition towards low-carbon urban mobility.

As part of this project, an intervention area that includes the pedestrian zone of the HCQ has been identified to conduct surveys of the needs of the logistics industry and gauge the interest in e-mobility services. In addition, the city is preparing a call for local innovators through the awarding of competitive funds



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that would support the local design and manufacture of electric vehicles that will be used in the SOLUTIONSplus pilot project. Conversations have also been held with the Global Environmental Fund of the United Nations Environment Programme to analyse the potential for collaboration between its national e-mobility project in Ecuador and the SOLUTIONSplus project in Quito.



RIO DE JANEIRO

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Since signing the C40 Green and Healthy Streets Declaration, Rio de Janeiro has established several milestones to transform the city's bus fleet.

In July 2019, the ZEBRA (Zero Emission Bus Rapid deployment Accelerator partnership, which supports the transition to zero emission buses in Latin American cities) working group started to work on the studies and data needed for the introduction of electric buses in Rio de Janeiro, in light of the commitment to transition to a zero emission fleet by 2025.

The city will now focus on a number of actions to progress towards its zero emission bus fleet. The city will implement a pilot project in collaboration with bus operators, the energy sector, the electric bus industry, and financiers. Together, they will select lines for operation, electric bus models, batteries, and recharging systems; design recharging infrastructure at garages and terminals; conduct a test process of operating the electric buses in the city; collect and process the resulting technical and operational information; and define and establish a new business model.

The Verão Verde project has been open to the public since November 14 2021, enabling the public to take a bus ride in the popular tourist district of Madureira on an electric or low emission bus on the weekends. This project aims to demonstrate the economic viability of electric buses, as well as giving public visibility to the benefits of reducing emissions. Three companies have provided the use and operational costs of the buses free of charge.

The city is in the process of bidding for 60 electric BRT buses to operate in the local system by 2023. This will make Rio de Janeiro the city with the largest electric bus fleet in the country. There will be an all electric bus garage with electric vehicle charging infrastructure. The buses will serve a low-income part of the city that links two suburban regional hubs and is connected to a major BRT bus route.

The Sustainable Development and Climate Action Plan mandates the establishment of a zero emission area by 2030, by adopting measures to increase active travel, sustainable urban solutions and the adoption of zero emission vehicles. The Reviver Centro Program, introduced in July 2021, instituted and delimited the low emission district. The Strategic Plan for 2021-2024 outlines the city's goal for implementing, at an early stage, its low-carbon emission district in the city centre, totalling 35,000 m² of public space by 2024.

The city will now draft the Low Emission District Regulation Decree, as outlined in the Reviver Centro Law. In addition, studies, projects and action plans will be developed for the implementation of the district's actions, including, as defined in the Strategic Plan for 2021-2024, clean mobility; air quality measurement monitoring; a greenhouse gas monitoring plan; urban interventions in pilot areas; and implementation of a bicycle path network.



Signing the C40 Green and Healthy Streets Declaration in 2018 was a fundamental step in Rome's ecological transition.

The city has created around 100 km of cycle paths to date. In 2021, 14 km of traditional cycle paths and 17 km of pop-up cycle paths were built. A further 80 km are under construction or being planned, including GRAB - the city's grand ring road for bicycles - with a length of 50 km. The Municipality of Rome has organised webinars to include citizens in the development of GRAB.

In Rome's Limited Traffic Zone, the city has introduced an electronic gate system, which will facilitate the future implementation of congestion and pollution-based charging policies.

The city is creating plans to extend its tram network, planning for 67 km of additional capacity. The required financing for construction has already been secured to cover around 25 km. In addition, the supply of 50 new tram vehicles is expected by 2022. By 2030, the city aims to triple the current tram network to almost 31 km.

In addition, two electric minibus lines have been created for the historic city centre, recovering about 25 disused vehicles.

Using funds from the National Recovery and Resilience Plan, the city will purchase 1,025 electric buses, of which 525 will be procured by 2026. The plan also includes the construction, conversion and upgrading of seven warehouses. The goal is to create a large area of the city in which all public transport is provided exclusively by electric vehicles. To support the rollout of electric mobility in the city, 500 charging stations have been constructed, while 16,000 e-scooters have been introduced.



ROTTERDAM

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Rotterdam is working to be a zero emission city before 2050. To do this, the city is focusing on avoiding vehicle trips, shifting towards walking, cycling and public transport, and electrifying the remaining motorised vehicles. The city's public transport fleet will be zero emission in 2030. The zero emission zone for urban logistics scheduled for 2025 and the procurement of zero emission buses are part of this approach.

There are already 55 full electric, 110 hybrid and two hydrogen buses in operation, and by the end of 2021, an additional 50 electric buses will be introduced. In the recently tendered procurement, the city has included the requirement that all buses must be zero emission before 2030. Rotterdam also continues to expand its public charging network, and more than 3,300 charging points are currently in place.

Rotterdam is preparing the introduction of a zero emission zone for city logistics (the complete goods transportation sector), 50 km² in size, to become effective in 2025. In June 2019 the city established a roadmap and in December 2020 signed a covenant with more than 60 partners. The covenant partners and the logistics community (of more than 1,600 members) are involved in the development and evaluation of logistics policy. The city recently

sent correspondence to 13,000 small businesses to alert them of the project and offer support in making the transition to zero emission freight. A subsidy scheme (LabZES) has been introduced, along with a covenant to stimulate novel ways to increase efficiency in city logistics. The city's procurement policy actively stimulates suppliers to make the transition to efficient and emission-free deliveries.

Rotterdam Klimaat Akkoord

Rotterdam has drawn up a local Rotterdam Klimaat Akkoord (Rotterdam Climate Agreement) to work with companies, city residents and other stakeholders on climate objectives. In addition to the zero emission zone for urban freight and introduction of zero emission buses, an employer approach on commuting has been started and the city is developing an area-oriented approach to residents. The employer approach focuses on promoting working from home, cycling, public transport and electrification of private vehicles. In the area-oriented approach with residents, the city will work to promote alternatives such as cycling, public transport and electric shared mobility.



SEATTLE

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Since signing the Green and Healthy Streets Declaration in 2018, Seattle has worked in a coordinated manner with the relevant transit operators to shift the bus fleet towards zero emissions. King County Metro, the local bus transit agency, has committed to only procure zero emission buses after 2023.

King County Metro has developed and received approval on a zero emission implementation plan, including zero emission bus procurement targets, supporting infrastructure, such as battery charging at bases, and IT solutions to manage electrical usage as the programme scales up in the future. The agency currently operates 174 zero emission electric trolleybuses and 11 fast-charge battery electric buses. It will be taking delivery of 40 extended-range battery electric buses over the next year and is planning to add 260 battery electric buses and supporting charging infrastructure by 2028. The agency is also exploring opportunities to transition its non-bus fleets to zero emission.

Seattle continues to implement its Pedestrian Master Plan, Bicycle Master Plan, and Transit Master Plan. In 2021 alone, Seattle built an additional 18 miles (28 km) of bike facilities and will construct a further 15 miles (24 km) of bikeways in 2022. Since 2020, Seattle has implemented 26 miles (42 km) of temporary 'Stay Healthy Streets', of which 20 miles (32 km) will be made permanent in 2022. Stay Healthy Streets are neighbourhood streets that are open to people walking, rolling and cycling, and allow only local access for vehicles; the city has observed an increase in walking and cycling of 357% and 111%, respectively, as a result of the Stay Healthy Streets programme. Seattle's Stay Healthy Streets programme will be expanded to establish the city's first urban pedestrian zone.

With technical support from C40 Cities, Seattle was able to conduct a city-wide goods movement analysis to help inform site selection and, in September 2021, undertook outreach to select residents and businesses in potential zero emission freight delivery neighbourhoods. Seattle's Department of Transportation is an active partner with the University of Washington's Urban Freight Lab, where well-funded research projects look to understand more efficient delivery of goods and services, including the application of vehicle detection technology the piloting of common carrier lockers to reduce truck travel times.

Seattle has also made significant strides in electrifying transportation, including updating the city's Green Fleet Action Plan, passing a strong electric-vehicle readiness ordinance and embarking on several electrification projects to advance freight electrification. In 2021, the city released Seattle's Transportation Electrification Blueprint, which is a first of its kind, comprehensive city-wide plan that outlines how the city will move towards a clean and equitable transportation system. It calls for the city to take immediate action to plan for the policy changes, infrastructure investments and partnerships that will be required to meet its ambitious electrification goals. The city will build on the expansion of public electric vehicle charging stations, by rolling out several additional rapid charge sites across the city in 2021 and 2022, in preparation for a zero emission area.

Seattle is delivering on its commitment to the C40 Equity Pledge by reporting equity and inclusion considerations in its climate actions

In the delivery of the C40 Green and Healthy Streets Declaration, the city has carried out an initial assessment of the potential impacts on equity of closing one or more Seattle streets or blocks to general-purpose internal combustion engines. The city has found that communities would benefit from being included in the development of people-oriented streets, as localised strategies could be co-developed to meet the needs of the community, and community leadership capacity could be increased in the co-design process. The city has also mapped out the possible negative impacts, from gentrification to an increased burden on those using cars for accessibility reasons and localised congestion. Seattle has identified multiple potential mitigation strategies to address these impacts, ranging from putting in place a robust monitoring system to ensure any disproportionate impacts on BIPOC

communities are addressed in a timely manner, to compensating community members for their expertise and time contributed to the co-design process.

In designing the city's Transportation Electrification Blueprint, the city is centring equity in all policies and programmes and has conducted an extensive outreach process with local community leaders and community-based organisations over several years. The city is listening to communities' feedback about prioritising electric transit, instead of focusing on personal vehicle ownership and improving access to electric vehicles. The city is also committed to preventing displacement due to gentrification and to creating living wage green jobs from electrification through the framework of the city's Green New Deal.



Former Mayor of Seattle, Jenny Durkan

"Right now, as our city and residents recover from the COVID-19 pandemic, we have the opportunity to build our city back better to prioritise our residents' health, safety, and quality of life. While the city is committed to reducing car trips, these efforts alone are not enough to meet our climate goals

- we must electrify everything that moves people, goods, and services in and around Seattle. By banning natural gas in buildings and electrifying our transportation system, Seattle can lead the nation in reducing our emissions and addressing climate change."



SEOUL

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Seoul is increasing deployment of zero emission buses to tackle air pollution and improve public bus services. Between 2018 and March 2021, 379 electric buses and four hydrogen fuel cell buses have been deployed. Over the next year, the city will continue to replace old, polluting buses with zero emission buses in phases.

Since 2012, the most polluting vehicles (Grade 5) have been restricted in Seoul and its environs within the city's low emission zone. After a six-month pilot, in December 2019, Seoul announced the permanent introduction of a Grade 5 vehicle ban in the city's Green Transport Zone to tackle air pollution and make it a safer and more pleasant area for residents. Within the Green Transport Zone, zero emission buses are in operation on four bus routes. Between December 2019 and December 2020, traffic of Grade 5 vehicles fell by 23.5% from 10,111 to 7,823 vehicles, while total vehicles fell by 13.8% from 776,919 to 670,019. The city has designated a further two areas within the city, Gangnam and

Yeoido, as Green Transport Zones, as well as seeking to ban Grade 4 vehicles (which include diesel cars with nitrogen oxide emissions of less than 0.463g/km, particulate matter emissions of 0.025 ~ 0.060g/km, manufactured to the 2006 emissions standards – Euro 4 - and petrol cars manufactured to the 1998-1999 standards) within the zones. Over the next year, the city is aiming to ban Grade 4 vehicles in the Green Transport Zone, in addition to coming up with measures to manage transport demand in a flexible manner based on vehicle standards.

Seoul continues to expand its cycling and walking infrastructure, improving pedestrian areas to promote active modes of transport. The city is also improving road safety by limiting car speeds to 50 or 30 km/h and installing square or diagonal crosswalks. It is also committing to reduce emissions further by introducing electric car sharing and operating green shuttles in the downtown area.



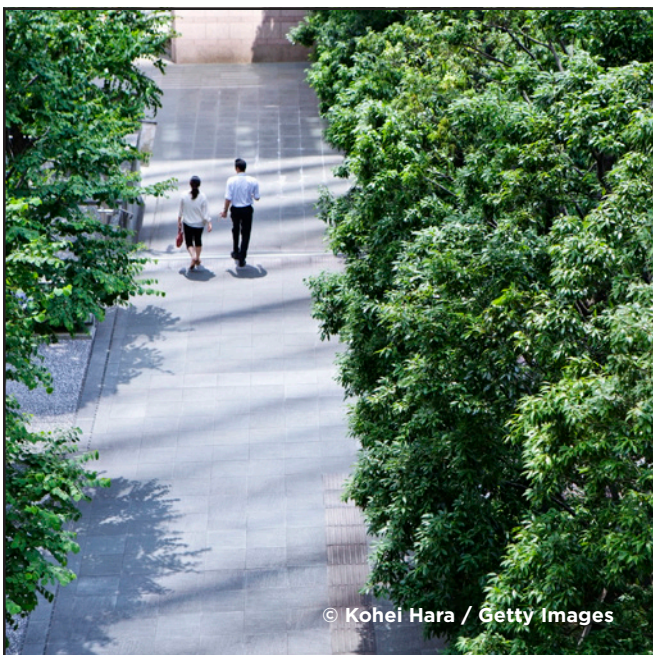
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Since signing the C40 Green and Healthy Streets Declaration in 2018, Tokyo has worked with various organisations to bring hydrogen fuel cell buses into operation as part of the Toei Bus (Tokyo Metropolitan Bureau of Transportation) service. The Tokyo Metropolitan Government is ensuring that when existing city-owned vehicles are replaced, they are replaced with zero emission vehicles.

In 2017 Toei Bus introduced the first transit buses in Japan using commercially-available hydrogen fuel cell buses. A total of 70 such buses were brought into operation by the end of FY 2020 (85 in total if private buses are included).

In order to work towards a zero emission Tokyo, the city has worked to increase the number of zero emission vehicles on the road. In 2020, a new target was established; to eliminate the sale of new gasoline-only passenger cars by 2030. In support of this goal, Tokyo also aims to introduce 5,000 vehicle charging stations by 2025, as well as 1,000 rapid vehicle charging stations by 2030.

In February 2020, Tokyo began working to create an environment that makes it easier for zero emission vehicle companies to operate. To create the required charging infrastructure that makes the operation of zero emission vehicles feasible, the city worked with private companies to install public charging stations, and organised a 'Zero Emission Vehicle Charging Infrastructure Expansion Meeting', where the governor of Tokyo worked with private companies that deal with supplying, installing and operating charging stations.



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VANCOUVER

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In November 2020 Vancouver's City Council approved the Climate Emergency Action Plan, which puts the city on track to reduce carbon emissions by 50% by 2030, in line with a 1.5°C trajectory. One of the main priorities of the city's climate plan is to tackle transport emissions, which currently account for 39% of the city's emissions.

To meet the City's carbon reduction goal, the City adopted several transportation-focussed targets for 2030:

- 90% of people to live within an easy walk or roll of their daily needs,
- two-thirds of trips in Vancouver to be made by active transportation and transit (an acceleration of the city's previous target to achieve this by 2040), and,
- 50% of the kilometres driven on Vancouver's roads to be made by zero emissions vehicles.

The city has made significant headway over the past ten years on shifting to more trips by walking, cycling and transit. Under Vancouver's Greenest City Action Plan, the city's mode split increased to 50%, one of the highest rates in North America. To achieve its climate goals, however, the city will need to scale up and accelerate efforts. It is putting significant effort into improving and expanding its walking and cycling infrastructure, while also advancing rapid transit corridors to improve the speed and reliability of priority bus service routes. Through the development of a city-wide plan, known as Vancouver Plan, the city is working to build more complete neighbourhoods, in which most residents can walk, bike or roll to their daily needs. The city has also significantly expanded its public electric vehicle charging network over the past few years and is also supporting electric vehicle charging retrofits

in private rental buildings, as well as charging infrastructure for car-share vehicles. The city has been transitioning its own light-duty fleet to electric vehicles.

In addition, Metro Vancouver's regional public transit authority, TransLink, is bringing 15 more battery electric buses into its fleet, more than quadrupling the number of battery electric buses in the city from 4 to 19. These electric buses will be operational from 2022 and each bus is expected to save 100 tonnes of CO₂ equivalent of CAN 40,000 in fuel costs every year. Under TransLink's Low Carbon Fleet Strategy, the transit authority is aiming to reduce its emissions by 45% by 2030 and replace all retiring conventional diesel buses with battery-electric buses between 2021 and 2029.

Advancing equity as part of Vancouver's climate work

As part of the Climate Emergency Action Plan, Vancouver created a climate and equity working group in 2020, and successfully recruited a wide range of people with lived experiences of systemic inequities, as well as those who work or volunteer to address racial and climate justice. This includes four seats for those who identify as Indigenous to ensure their voices and perspectives are represented in this group. Members of the Climate and Equity Working Group will advise city staff on climate-related policies, programmes, and engagement efforts from an equity perspective, and help to shape the development of a Climate Justice Charter that will integrate and advance equity in climate policy.



Since 2018 Warsaw has procured only zero- (electric) and low-emission buses. In 2020 Warsaw obtained 130 electric buses, based on procurement in 2019, which is a huge step towards decarbonisation of public transport in the city. Currently, there are 162 electric buses in Warsaw, which makes up around 8.5% of the total bus fleet.

Warsaw is currently working on the implementation of zero emission areas (ZEAs). In Polish law, these are called 'limited traffic zones', but their goal remains the same: to improve air quality. Implementation of a ZEA in Warsaw is mandatory under the Air Protection Programme for the city. Until the end of 2021, Warsaw will conduct analyses on the implementation of a ZEA. In 2022 the city will conduct a pilot project of a ZEA, leading to the implementation of the first permanent ZEA in 2023. All of these actions are accompanied by the transition of public transport to zero- and low-emission vehicles, the expansion of cycling infrastructure and development of charging stations for electric vehicles.



